2. The results are expressed in terms of cubic centimeters of fiftieth normal acid or alkali per 2 c.c. of blood.

3. The buffer values of blood for acid and alkali yield valuable information from a clinical standpoint. The reserve and total buffers may also be calculated from the results of the determinations.

4. The minimal values for normal blood have been determined; considerably larger values may be encountered. For a group of miscellaneous cases with normal pH, the average buffer values were somewhat lower, though within normal limits.

5. In certain cases with normal pH of the blood, but showing a tendency toward the development of an acidosis (as evidenced, for example, by lowered alveolar carbon dioxid tension), the buffer values were diminished. The loss of buffer for alkali was far more striking and frequent than for acid, and was often associated with lowered alveolar carbon dioxid tension. As a result of therapy, especially the use of alkali, the buffer values in some instances returned to normal.

6. In a series of cases of acidosis the average buffer values were found to be markedly diminished, particularly during the stage in which the pH of the blood was abnormally high. Normal buffer values may be encountered, however, in the presence of a true acidosis. Coincident with clinical improvement following treatment, particularly intensive alkali therapy, both pH and buffer values approximated or became normal in several cases.

7. It was not possible to supply buffer to the blood by the injection of phosphate mixtures.

8. By the intravenous injection of third-normal hydrochloric acid and 4 per cent. sodium bicarbonate solution into dogs, conditions of acidosis and alkalosis were produced which were inconstantly accompanied by changes in the buffer values of the blood.

9. The determination of the buffer value of the blood, especially in cases in which an acidosis is suspected or present, yields information of some diagnostic and prognostic significance and permits of a more complete study of the factors concerned in the maintenance of the acid-base equilibrium of the body.